

PERM-A-BARRIER[®] Liquid (US Version)

Spray applied air and vapor barrier

Product Description

PERM-A-BARRIER[®] Liquid is a two component, synthetic rubber, cold-vulcanized, fluid applied membrane. It cures to form a resilient, monolithic, fully bonded elastomeric sheet. PERM-A-BARRIER[®] Liquid will protect above grade wall assemblies against the damaging effects of air, vapor and water ingress. PERM-A-BARRIER[®] Liquid also provides an effective barrier against air infiltration and exfiltration and associated energy loss and condensation problems.

The Volatile Organic Compound (VOC) content of PERM-A-BARRIER[®] Liquid is less than 75 g/L. Architectural and industrial maintenance regulations limit the VOC content in products classified as architectural coatings. Refer to Technical Letters for most current list of allowable limits.

Product Advantages

- **Air tight** - Meets ASTM E2357 standard as required by IECC 2012
- **Fully bonded** - transmits wind loads directly to the substrate
- **Elastomeric** - accommodates minor structural movements and will bridge cracks
- **Asphalt free formulation** - does not become brittle with age and remains flexible to -23°F (-30°C)
- **Chemical cure** - no loss of volume; wet thickness is equal to dry thickness
- **Seamless** - continuous membrane integrity with no laps
- **Primerless** - applied directly to the substrate with minimal surface preparation
- **Damp surface tolerant** - can be applied to damp-to-touch surfaces
- **Solvent free**
- **Cold applied** - eliminates fire hazards during application
- **Quick and easy application** - by airless spray
- **Wide application window** - can be sprayed down to 20°F (-7°C)
- **Versatile** - easy to use at details such as internal and external corners, brick ties, penetrations, etc.
- **Enhanced weatherability** - product can be exposed to UV up to a maximum of 60 days

Principal Applications

New and remedial air and vapor barriers for commercial and residential applications:

- Concrete block walls with brick veneer or pre-formed cladding panels
- Steel or wood stud walls with exterior gypsum board, brick veneer or pre-formed panels

Do not specify PERM-A-BARRIER[®] Liquid for interior applications.

System Components

- PERM-A-BARRIER® Liquid - for horizontal and vertical applications
- S100 Sealant - one part neutral curing, ultra low modulus silicone sealant for detailing and joint treatments
- BITUTHENE® Liquid Membrane - for details and terminations
- PERM-A-BARRIER® Wall Flashing - heavy duty fullyadhered membrane for through-wall flashing details
- PERM-A-BARRIER® Detail Membrane - flexible fully-adhered membrane for flashing around window jambs, door jambs and sills.
- PERM-A-BARRIER® Aluminum Flashing - Aluminum Faced fully adhered flashing for protecting and sealing critical detail areas

Installation

Safety

Refer to product label and Safety Data Sheet before use. All users should acquaint themselves with this information prior to working with the material. Carefully read detailed precaution statements on the product labels and SDS before use. SDSs can be obtained from our web site at gcpat.com or by contacting us toll free at 866-333-3SBM (3726)

Application

PERM-A-BARRIER® Liquid is installed by airless spray application. GCP has a network of Specialist Spray Applicators who are trained and experienced in spray application. Contact GCP for further details of local applicators, application techniques and spray equipment.

Surface Preparation

All surfaces must be sound and free from spalled areas, loose aggregate, loose nails or screws, sharp protrusions or other matter that will hinder the adhesion or regularity of the membrane installation. The surface should also be free from frost, dirt, grease, oil or other contaminants. Clean loose dust and dirt from the surface by brushing or wiping with a clean, dry cloth.

Concrete and other Monolithic Cementitious Surfaces

Surface irregularities and voids greater than 1/2 in. (13 mm) in depth should be pre-treated with BITUTHENE® Liquid Membrane or repaired with a lean mortar mix or non-shrinking grout. Remove high spots greater than 1/8 in. (3 mm) in height. On highly dusty or porous substrates it may be necessary to apply PROCOR® Concrete Sealer before applying the PERM-A-BARRIER® Liquid.

PERM-A-BARRIER® Liquid may be applied to green (minimum 3 day cure time) concrete or over damp-to-touch surfaces. Remove any visible water prior to application. In green concrete or damp substrate applications, direct sunlight may cause the surface temperature to rise rapidly, drawing moisture from the substrate and resulting in blisters and pinholes in the membrane. Under these conditions it may be necessary to apply PROCOR® Concrete Sealer or a scratch coat of PERM-A-BARRIER® Liquid before applying the full thickness of the PERM-A-BARRIER® Liquid.

Concrete Masonry Units (CMU)

The CMU surface should be smooth and free from projections. Strike all mortar joints full and flush to the face of the concrete block. Fill all voids and holes, particularly at the mortar joints, with a lean mortar mix or non-shrinking grout. Alternatively, a parge coat (typically one part cement to three parts sand) may be used over the entire surface.

Exterior Sheathing Panels

PERM-A-BARRIER® may be applied directly to exterior sheathing panels such as exterior drywall, plywood and oriented strand board (OSB) and glass faced wall boards. To avoid deflection at the panel joints, fasten corners and edges with appropriate screws. Fasteners should be driven flush with the panel surface (not counter sunk) and into the framing system in accordance with the manufacturers recommendations. Completely fill the sheathing joint with S100 Sealant and then install a scratch coat (approx. 15-30 mils) of S100 Sealant with a margin trowel or similar onto the face of the sheathing approximately 1 in. (25 mm) on each side of the sheathing joint, ensuring the edges are tapered to prevent shadowing of the spray application. Once the sealant is tack free, the PERM-A-BARRIER® Liquid may be applied.

For further information on joint treatment refer to Technical Letter 2, *Substrate Preparation for Application of PERM-A-BARRIER® Products to Glass-Mat Faced Gypsum Sheathing* or Technical Letter 6, *Substrate Preparation for PERM-A-BARRIER® Liquid Applications*.

Application Temperature

Spray Application

In spray applications using PERM-A-BARRIER® Liquid, it is possible to work at temperatures below 40 °F (4 °C) provided there is no frost or condensation on the substrate. The minimum temperature for spray application is 20 °F (-7 °C). Contact your GCP representative for details of cold weather spraying or refer to Technical Letter 9, *Spraying PERM-A-BARRIER® Liquid at low temperatures*.

Detailing

Detailing should be completed prior to applying the full coverage of PERM-A-BARRIER® Liquid. The continuous field application should completely cover the detail areas to provide double thickness coverage. For a complete description and instructions on individual details, consult the separate detail sheets found on our web site at gcpat.com.

Transitions to beams, columns, window and door frames, etc. should be made with a strip of PERM-A-BARRIER® Detail Membrane, PERM-A-BARRIER® Aluminum Flashing or PERM-A-BARRIER® Wall Flashing. Only PERM-A-BARRIER® Wall Flashing can be used for through wall flashing applications or under masonry units. Optimum adhesion will be achieved when the self-adhered flashing is lapped onto the cured PERM-A-BARRIER® Liquid. As soon as the PERM-A-BARRIER® Liquid is tack-free, it is ready to accept the membrane. For further information, refer to Technical Letter 11, *Adhesion of Rubberized Asphalt Membranes to PERM-A-BARRIER® Liquid in Air and Vapor Barrier Applications*.

A minimum 6 in. (150 mm) wide strip of PERM-A-BARRIER® Detail Membrane, PERM-A-BARRIER® Aluminum Flashing or PERM-A-BARRIER® Wall Flashing should be installed and centered over all outside corners ensuring that all horizontal laps shed water. Self-adhered flashing at corners may be installed prior to the PERM-A-BARRIER® Liquid application in accordance with the applicable data sheet and installation instructions or after PERM-A-BARRIER® Liquid has cured. Avoid installing S100 Sealant under self-adhered flashing.

Any gaps around penetrations should be caulked with BITUTHENE® Liquid Membrane or a polyurethane sealant prior to the PERM-A-BARRIER® Liquid application. Refer to GCP standard penetration detail for PERM-A-BARRIER® Liquid.

Thickness Control

Application thickness is controlled in both horizontal and vertical applications by marking the area and spot checking the thickness with a wet film thickness gauge. Swipe marks on the surface of the PERM-A-BARRIER® Liquid are acceptable as long as the minimum thickness is maintained.

Spraying

CAUTION! Do not add water or any other material to thin the product.

Part A reacts with water, releasing heat. Do not allow Part A to come in contact with water.

For PERM-A-BARRIER® Liquid, use qualified spray equipment systems. Mixing occurs within the spray gun assembly. Premix Part A prior to pumping to bring any settled material back into solution.

Coverage Rates

PERM-A-BARRIER® Liquid is typically applied at a minimum thickness of 60 mils (1.5 mm). The theoretical coverage rate (not including waste) at a 60 mils (1.5 mm) thickness is about 25 ft²/gal (0.6 m²/L). Coverage rates will be reduced over rough and uneven substrates.

Application of Insulation and Finishes

PERM-A-BARRIER® Liquid is not suitable for permanent exposure and should be protected from the effects of sunlight as soon as possible after application. Insulation boards may be bonded to the PERM-A-BARRIER® Liquid by pressing them into place after the PERM-A-BARRIER® Liquid has set enough to hold their weight but is still tacky (generally between 30 minutes and 4 hours depending on temperature). PERM-A-BARRIER® Liquid has sufficient tack to hold the weight of the boards but insulation clips are recommended for long term attachment. If the insulation cannot be applied within 60 days of the PERM-A-BARRIER® Liquid application, some form of temporary protection (such as dark plastic sheet or tarpaulins) should be used to protect the product from the effects of sunlight.

Cleaning

Tools and equipment are most effectively cleaned by allowing the material to cure and simply peeling it off the next day. PROCOR® Flushing Oil is available to clean spray equipment.

Storage and Handling Information

PERM-A-BARRIER® Liquid (Part A and Part B) should be stored under cover in original sealed containers above 40°F (4°C) and below 100°F (38°C). Keep Part B from freezing during storage. The shelf life is 9 months in unopened containers.

Limitations

PERM-A-BARRIER® Liquid should not be used in areas where it will be permanently exposed to sunlight, weather or traffic.

Maximum exposure period is 60 days.

Do not apply PERM-A-BARRIER® Liquid in wet weather. Once applied, the membranes will not be affected by light rain showers.

PERM-A-BARRIER® Liquid should not be used in negative-side waterproofing applications in hydrostatic condition.

PERM-A-BARRIER® Liquid is not compatible with petroleum solvents, fuels and oils, materials containing creosote, pentachlorophenol or linseed oil.

Supply

| PRODUCT | UNIT OF SALE | APPROXIMATE COVERAGE ¹ | WEIGHT AT 1.5 MM (60 MIL) | PALLETIZATION |
|------------------------|---------------|-----------------------------------|--|--|
| PERM-A-BARRIER® Liquid | 75 gallon kit | 1875 ft ² /kit | 748 lbs/kit, net (573 lbs Part A & 175 lbs Part B) | 1 or 2 kits/pallet, for orders of 1 or 2 kits only |

| | | | | |
|--|------------------------------|-----------------------|--------------------|-----------------------------------|
| BITUTHENE® Liquid | 1.5 gallon (Part A & Part B) | | 18 lbs/kit (8 kg) | 100 kits/pallet |
| Membrane | 4 gallon (Part A & Part B) | | 44 lbs/kit (20 kg) | 24 kits/pallet |
| PERM-A-BARRIER® Wall Flashing | | | | |
| 12 in. (305 mm) | 3 rolls | 75 linear ft per roll | 25 lbs/roll | 25 cartons (75 rolls) per pallet |
| 18 in. (457 mm) | 2 rolls | 75 linear ft per roll | 37.5 lbs/roll | 25 cartons (50 rolls) per pallet |
| 24 in. (610 mm) | 1 roll | 75 linear ft per roll | 55 lbs/roll | 35 cartons (35 rolls) per pallet |
| 36 in. (914 mm) | 1 roll | 75 linear ft per roll | 75 lbs/roll | 25 cartons (25 rolls) per pallet |
| PERM-A-BARRIER® Detail Membrane | | | | |
| 6 in. (152 mm) | 6 rolls | 75 linear ft per roll | 11 lbs/roll | 25 cartons (150 rolls) per pallet |
| 9 in. (225 mm) | 4 rolls | 75 linear ft per roll | 16 lbs/roll | 25 cartons (100 rolls) per pallet |
| 12 in. (305 mm) | 3 rolls | 75 linear ft per roll | 22 lbs/roll | 35 cartons (75 rolls) per pallet |

Physical Properties

| PROPERTY | TYPICAL VALUE | TEST METHOD |
|---|--|---------------------------------|
| Air permeance at 1.57 psf (75 Pa) pressure difference | <0.0002 cfm/ft ² (<0.001 L/s/m ²) | ASTM E2178 |
| Assembly air permeance at 1.57 psf (75 Pa) pressure difference ¹ | <0.0008 cfm/ft ² (<0.004 L/s/m ²) | ASTM E2357 |
| Water vapor permeance | 0.08 Perms (4.6 ng/Pa.s.m ²) | ASTM E96 - method B |
| Water vapor permeance after aging ² | 0.033 Perms (1.9 ng/Pa.s.m ²) | CAN/CGSB-51.33-89 |
| Pull adhesion to concrete block (CMU) ⁴ | 35 psi (0.24 N/mm ²) | ASTM D4541 |
| Pull adhesion to glass faced wall board | 18 psi (0.12 N/mm ²) (pulls board apart) | ASTM D4541 |
| Peel adhesion to concrete ⁴ | 5 lbs/in. (880 N/m) | ASTM D903 modified ³ |
| Elongation | 500% | ASTM D412 |
| Pliability, 180° bend over 1 in. (25 mm) mandrel at -23°F (-30°C) | Unaffected | ASTM D1970 |
| Low temperature flexibility and crack bridging 1/8 in. (3.2 mm) crack cycling at -15°F (-26°C) | Pass | ASTM C836 |

| | | |
|--|-------|------------|
| Extensibility over 1/4 in. (6.4 mm) crack after heat aging | Pass | ASTM C836 |
| Color | Green | |
| Solids content | 100% | ASTM D1644 |

Footnote:

1. Results below detectable limits of laboratory equipment.
2. Aged for 25 cycles of 3 hours at 122°F (50°C), 3 hours in water at 70°F (21°C), 18 hours at 14°F (-10°C)
3. PERM-A-BARRIER[®] Liquid is applied to concrete and allowed to cure. Peel adhesion of the membrane is measured at a rate of 2 in. (50 mm) per minute with a peel angle of 90°.
4. Lab results, field results may vary

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